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Environmental Displacement in Sindh: A Case Study of 2022 Flood in District Khairpur

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Abstract

Climate-induced migration has become a very serious challenge faced by Pakistan, particularly the 2022 rain-floods that displaced millions of people, destroyed household and infrastructure. This paper explores the patterns and impacts of 2022 rain-floods on migration in district Khairpur, a badly affected district from the floods across the Sindh province, where more than 0.6 million of people emerged in the circle of temporary displaced persons (TDPs). This study determines the following three methods of migration: First rural to rural, which was the highest number of 43%, second, rural to urban, that recorded 37% and third was inter-district that was only 4% of total migration. Thus, this research discovers that 36% of affected people migrated semi-permanently in urban areas of Khairpur, that may cause the increasing 16% of informal residents and burdened on the district infrastructure, health and education. It furthermore investigates how government and NGOs responded to the affected households and rescued them from such natural catastrophes. This study also emphasizes the immediate actions taken by the government to prevent such climate-calamity and its impacts on migration to maintain the rural and urban life of small cities like Khairpur.

Key Words: 2022 floods in Sindh, climate-migration, flood displacement, urban and rural resilience, and district Khairpur.

Introduction

Climate change is a challenging issue facing the world, affecting about 25 million to one billion people by 2050 (Bassetti, Environmental Migrants: Up to 1 Billion by 2050, 2022). Hence, urban life is directly impacted by climate-induced migration because most of the displaced people try to shift towards urban cities for the discovery of a better and safer life. The research shows that almost 30 million people have migrated in the world due to climate-related catastrophes (Mallapaty, 2022). The urban population has continuously increased by seven lacs annually due to droughts and floods in Pakistan (Latif, 2022). Since independence, Pakistan has observed several large and small natural disasters, including torrential floods, earthquakes, windstorms, water scarcities etc. Moreover, rain and flash floods of August 2022 broke the record of the worst natural disaster in Pakistan's history that displaced millions of people and devastated more than the Indian Ocean tsunami of 2004, the Kashmir earthquake of 2005, the Haiti earthquake of 2010, and even the 2010 floods of Pakistan. Thus, the rural areas of Sindh province had been severely affected by unprecedented heavy rains and flash floods of 2022. Likewise, the water of flash floods pulled back within days in K.P.K and Balochistan due to the hilly areas, but it retreated for weeks in Punjab and months in Sindh due to the plain area of the region.

Thus, millions of people have been forced to migrate from their homes for survival and are bound to live on the edge of roads since the heavy rain of August 2022 in Sindh that hit more than fifty million people. Reuters, a renowned media house, reported that Sindh has been the most affected province by this "unprecedented climate change" that received 471% of the rain, which has not been observed for thirty years (Vijdan Mohammad Kawoosa, 2022). According to the Ministry of Climate Change, one-third of the country has been submerged under water through this heavy monsoon rain. More than two million acres of land had been affected by inundation, of which 1.54 million acres land of Sindh province only. Additionally, it reported that 145 bridges and around 3000km of roads had either been poorly damaged or destroyed. The National Disaster Management Authority (NDMA) stated that the country's 80 districts have been under flood water and declared as "calamity-hit", containing 23 districts of Sindh. Around 896,000 houses had been devastated, 386,039 homes were under torrential floods, and more than 135,710 families went into the circle of internally displaced persons (IDPs) in Sindh ((SRSO), 2022).

Besides, more than three lac homes were partly, and 11,665 were completely ruined. Furthermore, more than 12,728 people were injured and 1,700 people died in this calamity, in which 578 deaths and 8,321 injuries were reported in the northern areas of Sindh (Khan, 2022). Moreover, 18% of the total land of Sindh province has been deluged by floods, in which the northwestern districts of the province are badly affected (Qamer, 2022). According to the World Bank, almost $30 billion has been lost in Pakistan. Resultantly, it was declared a national emergency in the country by August 2022 and pleaded to national and international

NGOs and donors for assistance. Around 30 million people became IDPs and estimated that more than RS. 53.3 billion was lost by the agriculture and livestock sectors only, stated by the Chief Minister of Sindh. Thereafter six months, the flooded areas of the province were still under water.

Sindh is the most urbanized province of Pakistan, with a ratio of 54% urban population counted in the recent census of 2023, and it was 46% in the 1998 census. Therefore, the 2022 rain and flash floods have also enlarged the ratio of urban population due to flood-induced migration. Resultantly, it creates problems for urban life due to the gradual devastation of rural survival because of such natural disasters and negligence of the provincial government. It is also stated that after the two years of the 2022 rain-flood affected people were still under shelter because of poverty. The current extraordinary floods of 2022 triggered a large forced migration, which has broken the earlier record in the history of Pakistan. Sindh has the most severely damaged province regarding the loss of human lives and infrastructure by torrential floods. According to a survey of Sindh Rural Support Organization (SRSO), Dadu, Khairpur, and Noshahro-Feroz districts of Sindh have 50-60% of flood victims people and they have either permanently or short-term moved to safe cities ((SRSO), 2022).

District Khairpur is one of the most affected districts of Sindh by the unprecedented rain and flash floods of August 2022. International Organization for Migration (IOM) published a report which reveals that approximately 653,738 people became temporarily displaced persons (TDPs) from most five affected districts of Sindh including Larkana, Khairpur, Dadu, Mirpur Khas and Umer Kot. Moreover, 55% of total TDPs returned to their homes whereas the remaining 45% backed from other union councils hence, Khairpur has the maximum number of 617,738 TDPs lonely ((IOM), 2022). Similarly, SRSO surveyed in October 2022 which discloses that Khairpur has the highest number of 269,256 households who migrated after the devastating floods of August 2022 (SRSO, 2022). Therefore, this study will focus on the effects of 2022 floods on migration particularly in district Khairpur, Sindh. How does this migration impact urban life, what were the reasons behind the migration from flood-victim areas to urban areas during the natural hazards of 2022, and how did the provincial government respond to it? This study will try to attempt these questions.

Statement Problem

There are so many authors and organizations who have worked on 2022 floods and its impacts on social life, infrastructure, economy, households, education, health, business, agriculture, etc., but no single study has been done particularly on the impacts of floods on migration in Sindh. Therefore, this study will try to effectuate this research gap to address the research question related to the migration by floods.

Purpose of the Study

Ø To highlight the impacts of floods on migration in the district of Khairpur during the floods of 2022.
Ø To examine the condition of flood victims and how they responded to such unprecedented floods.
Ø The role of national government and international donors (like the USA, World Bank, and ADB) and NGOs towards the flood-affected region.
Ø To highlight the national strategies to prevent such natural calamities.
Ø To explore the repercussions of the 2022 floods on urban life.

Research Questions

The major question of the study is:

Ø To find out the reasons behind the migration and return of flood-affected people to their prior region during the floods of 2022 in the district of Khairpur?

The supplementary questions are:

Ø How do natural disasters impact migration?
Ø How does the flood-induced migration disturb the urban life of the district Khairpur?
Ø To identify the possible repercussions of growing urbanization in rural areas.

Research Methodology

This topic is based on mixed methodology by using a qualitative research approach, in which both primary and secondary data sources will be used. The primary data will be composed from the records of displaced persons or households from the official documents collected by the national and international NGOs, NDMA, SRSO, World Bank report, and the International Organization for Migration (IOM) to justify the study. The secondary data will be employed from different reports or publications of national and international independent research scholars, newspaper articles, and research papers.

Literature Review

Fatima Arshad writes regarding the inabilities of the government and its repercussions on water scarcity during the flash floods of 2022. She noted that, Pakistan Meteorological Department had cautiously warned the government about the unprecedented heavy monsoon rains a couple of months before in May 2022. But unfortunately, the irresponsible way of bureaucracy and the incapabilities of politicians who did not deem the given prediction to prepare for natural disasters. Instead, the government allowed the illegal construction and encroachment on the banks of rivers, for instance Honeymoon hotel of Swat, which was demolished in a few seconds

during the torrential floods of 2022. Thus, the same hotel was also wrecked in the 2010 floods. Moreover, Pakistan is a water-stressed country on the rank of 14th out of 17 in the world and could not store the water when the country's one-third was under water during the 2022 floods. The annual per capita of Pakistan's water availability decreased from 1500 to 1017 cubic meters since 2009. Furthermore, the water storage capacity of Pakistan does not exceed 30 days, which was recommended to be 1000 days for a country like Pakistan (Warraich, 2022).

The baseline assessment was briefly conducted with the help of IOM's Displacement Tracking Matrix in which revealed that 33 million people had been affected from mid-June to mid-October 2022 due to flash floods. Hence, 23 districts of Sindh were declared calamity-hit, and almost more than 14 million people were affected, and 1.9 million households were badly hit by floods only in Sindh. This survey covered only five districts of Sindh, including Larkana, Khairpur, Mirpur Khas, Umer Kot, and Dadu, in which more than 15 lacs were temporary displaced persons (TDPs) and 231,630 households have been identified of their displacement. In this calamity-hit district by floods, Khairpur has the exceptional number of displacements that is 617,850 TDPs and 94,001 households reported, of which only 41% have been identified (IOM, 2022).

Ayman Ijaz writes about the climate-induced migration in Pakistan, in which she emphasizes that floods are the main cause of the migration, whether it's long-term or temporary. Thus, she differentiates between climate refugees and climate migration: those who are suddenly affected by environmental change and leave their homes are called environmental refugees. And those who are affected by long-term climate change, like extreme weather conditions, are called climate-induced migrations (Ijaz, 2017).

Neha Nisar pointed out the same arguments as does by Ayman regarding climate-induced migration, that heavy flooding, extreme weather conditions, and the intrusion of sea level become the causes of climate migrants. Furthermore, she adds, it's expected that Pakistan will face 20 million migrants due to climate change by 2050, in which floods are one of its major contributors (Nisar, 2022).

Another detailed research work has been published by the Sustainable Development Policy Institute (SDPI) on climate-induced migration, in which two districts, Muzaffargarh and Tharparkar, have been chosen for the survey. The report witnessed that the climate-induced displacement is mainly caused by floods and droughts. Tharparkar, a southern district of Sindh, mostly faces droughts, resultantly the migration takes place to save and feed their families. Whereas Muzaffargarh, a southern district of Punjab, commonly observes the floods; consequently, the affected people are compelled to move towards safe areas, and at least one or two members of the victim families migrated to cities to earn during these circumstances (Kashif Majeed Salik, 2020).

Zoha Tunio argues in her article that more than 50,000 people from affected areas by floods migrated to Karachi, the capital city of Sindh (Tunio, 2022). Additionally, Naveed Hamid expounds on the growing urbanization in Pakistan that is inappropriate and unbearable for urban life. The magnitude of urbanization in Pakistan has increased by up to twice since the first census of 1951. In the last two censuses of 1998 to 2017, the urban population has, too, extended up to 33 million, in which 44% of the population migrated from rural areas; therefore, approximately 0.75 million people annually migrate from rural to urban areas due to various factors (Hamid, 2022).

From the account of Sadia Ishfaq, there are several factors behind the growing population of urban areas. But the primary cause is the unprecedented climate change (floods, droughts, and heatwaves) that becomes the cause of a decline in the yield of crops, soil degradation, pollution of water, etc. (Ishfaq, 2018). UNFPA has pointed out that natural catastrophizes like torrential rains and floods are major contributors to inland migration in Pakistan. Zeshan Shah explicitly elucidates that Pakistan has faced large and small-scale migration, either due to its climate change or military operations against terrorism in northern areas, but almost 70% of total migration happens due to floods. Migration during the floods of 2022 is one of the largest migrations since the nation's independence (Shah, 2022). Shah does not show the figure of people migrated by floods. No reliable source is available that addresses the comprehensive question of migration.

Results and Discussion

According to the 7th digital census of Pakistan 2023, the population of district Khairpur reached 3.18 million, which was 2.4 million in the 2017 census, of whom 57% of residents live in urban areas of the district (PBS, 2024). 71% of Migration had been experienced by the natural disaster during August 2022 to January 2024, in which 42,603 residents had been badly affected. The International Organization for Migration (IOM) reported that 617,738 temporary displaced persons (TDPs) were only in District Khairpur, which was the largest number of TDPs across the province (IOM I. O., 2023).

Gender and age assessment reveals that women have 52% of the population in which the children below the age of 18 are 38% that may cause the increasing number of absent children from school, Pakistan already has stood on second number in the world whose 20 to 25 million children are out of school (UNICEF, 2023). The average displacement of median-sized households is 6.3, which is slightly higher than the average of district households, which is 5.9 (PBS, 2024).

There were three types of migration experienced during the 2022 floods in Khairpur. First: Rural to rural migration, 43% of badly affected families moved to their relatives nearby their villages for a short period during the peak of the 2022 floods. Second: Rural to urban

migration was recorded by 37%, and this migration shifted towards Khairpur city, particularly. Third: inter-district migration towards Sukkur, Hyderabad, and Karachi, and this movement was reported to be the lowest from the previous, which was only 4% (PDMA, 2023).

Return of migration to original households may vary, because most of the affected rural areas were under inundation after the months of flood. IOM reveals that 55% of the total number of migrants returned by November 2023, and the remaining 9% returned to their prior homes by January 2024. Moreover, the remaining 36% became semi-permanent urban residents due to either the destruction of roads or partial devastation of their homes (IOM I. O., 2023).

Furthermore, 65% of Sindh's residents depend on the agriculture sector, but after the destruction of forms in rural areas by floods, 68% of affected people rely only on casual wages; thus, the displaced people shifted themselves towards daily labour after the crop losses (Bank, 2024). Thus, it's reported that 29% of displaced families received cash from different NGOs to meet their basic needs. During the 2022 natural disaster, average monthly income decreased from Rs. 38600 to Rs. 24100, resulting in a 38% reduction (Sindh, 2023).

Thereafter the flood disaster, the relief efforts were limitedly observed, the PDMA distributed 92,000 ration packs and 18,000 tents that covered only 28% of displaced households. Moreover, the same NDMA also granted the Build-Back Better to 11,211 affectees, whose houses were fully damaged (NDMA, 2024). Whereas the international NGOs filled a gap that was unfilled by the national authority, Médecins Sans Frontières (MSF), a Geneva-based NGO, opened four mobile clinics in the district to provide medicine to needy people. Islamic Relief, a humanitarian aid NGO based in Birmingham, installed 37 hand-pumps and 18 solar mini-grids in the district (Relief, 2023).

The number of inhabitants has increased by 16% in *Katchi Abadi* (remote areas) alongside the Mirwah canal road in district Khairpur during 2021-2023. While the number of patients has also increased by 29% at the civil hospital Khairpur, it's because of the post-flood migration towards urban areas (Records, 2023).

This study demonstrates that, along with the international organizations' report, rapid changes in the climate disaster often induce short-term displacement of localized masses. However, Khairpur's case is not similar in this regard because approximately 36% of displaced people were resettled semi-permanently, which challenges the binary notion of climate-induced mobility as temporary or permanent (IOM I. O., 2023). These arguments reveal that climate-induced migration happened in both spectrums, either by environmental change or local recovery. There were several reasons behind the migration due to extreme floods, but the primary ones were the destruction of homes and the failure of crops, particularly in the affected areas of *Kachi Abadi*. Moreover, the spreading of waterborne diseases and contaminated water, for a long period, may cause the mobility of masses (PDMA, 2023). Resultantly, the informal

settlements of Khairpur city enlarged by 16%, which overloaded the infrastructure of the city, the drainage system, sewage, and health facilities (PBS, 2024).

Thus, as its already notified that Pakistan is the worst affected country by the climate change and natural disasters, therefore, in such problematic situation Pakistan was pledged to get $9 billion from the international organization and financial institutions at the summit of climate resilience at Geneva in January 2023 hosted by UN-Pakistan (AlJazeera, 2023). The major contribution of these funds was pledged to grant by the Islamic Development Bank: $4.2 billion, the World Bank: $2 billion, Saudi Arabia: $1 billion, and the remaining was promised by the EU, China, France, and the USA (Investing, 2023). The purpose behind this fundraising was to recover the 4RF- Resilient Recovery, Rehabilitation, and Reconstruction Framework, to construct the infrastructure housing, and to consolidate climate resilience. Unfortunately, after having pledges, most of the funds gained by Pakistan's government in the form of loans rather than grants, which caused an increase in debt instead of assistance (Iqbal, 2023). By the end of 2024, only $3 billion had been received by Pakistan, and it was mostly in debt form (Times, 2024).

Consequently, the Sindh government took a great initiative to reconstruct the destroyed households of affected people by launching the Sindh People's Housing for Flood Affectees (SPHF) after the natural catastrophic floods of 2022. The SPHF project's key financial contributor and technical support is provided by the World Bank, and its sole aim is to provide homes for affected people and to take such initiatives for preventing such natural disasters in the future. Under this project, the SPHF received an amount of $400 million from the World Bank and $227 million from the provincial funds at its inauguration. Thus, the SPHF has rehabilitated approximately 12.6 million affected people by the reconstruction of 2.1 million houses till June 2024 throughout the province. Moreover, the chief minister of Sindh, Murad Ali Shah, told the press that Rs 550 billion has been employed through this construction, of which the R. 440 billion was obtained from sponsors and the remaining from the federal government. From 2.1 million reconstructed houses, district Khairpur has a maximum number of 218,894 houses that were built at the cost of Rs 65.67 billion (News, 2024).

Conclusion

The 2022 rain-floods in Sindh compelled the people to leave their homes and migrate to safe regions, in which district Khairpur was severely affected by the climate disaster's unprecedented rain and floods simultaneously. About more than six lac people left their homes and moved to safer areas solely in Khairpur district, in which most of the affected people live on the roadsides because everywhere in the planned areas were under flooded. It was an extraordinarily devastating situation to deal with, and rescuing the displaced people faced by the government.

Whenever such a disastrous situation happens in Pakistan, the incompetent government takes advantage of this to accumulate funds in the name of a natural disaster from international organizations and friendly countries. Similarly, Pakistan's government collected an attractive amount of $3 billion from international NGOs and institutions to rehabilitate the displaced people, and according to the official report of SPHF, they claim to have reconstructed 2.1 million homes in Sindh province, in which Khairpur received more homes than other districts. Indeed, half of these homes are completed, and the remaining are under construction after an investment of Rs. 65.6 billion on Khairpur alone.

Furthermore, the lives of affected people are still under grievous conditions because of the destruction of their homes and agriculture, on which they entirely rely, during the 2022 rain-floods in the region. The Sindh government has only focused on the reconstruction of rooms and neglected the remaining basic facilities the affected people needed, like portable water, health, education, and infrastructure. It is just because of showing the world that the government is sincere to their people and has done the best to rehabilitate the masses and rescue them from the natural calamity of 2022. Thus, the government has still not taken such long-term strategies regarding climate change and precautions to prevent such a natural catastrophe, thereby getting a huge amount from the world. Resultantly, policymakers must have to make enduring policies for climate change rather than compel the displaced people to leave their homes for survival.

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